

# WELC TO ATAI MAGA

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### CENTRONICS INTERFACE



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or 130 XF - or to disc dr

DEALER ENQUIRIES MOST WELCOME





### Setting the standard for adventure graphics AS promised has recent, let's BRILLIG takes a first look at adventures

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inspired by those Marvel comic heroes story line behard each as similar, as person of an entirely occurred new





## What you need is a point of reference

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Computer Support PRESENTS-

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products for every Atari user

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26 Septemari Energy, Abbury Wood, Lendon St 2 NeW Yel, 01-311 7330 Physics note:

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# Sparkling arcade game is fast – and fun...



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Dave Russel

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## Seem marking code or new

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The race is on to provide a wide range of ST goodies















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Languages and other tool The first Rome products to

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# IT'S REA GEM

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opproach with GEM because it is our Interface which is compact with a wide range of application operating systems languages of becomes CEM will have more impaction and save market than any off conduct which was on any site.

Yeark hason is Deselve, he European Operations, il



### By FRANK IVESON

The Envisionmental resource both the GEM concept was stone in the ready. Yot by Xerox FARC in the 1 and was try implemented on Xerox Star network and later by Apple Leasand Macretosh OEM is therefol based on a long history of as

reperience. Xeros a necessi commitment to GSM is a Suther industries of the instance of the instance of the product not rendered the industrial selection as as labority standard. GEM Osakhop the opinional system metaphor is the first GSM application with most users will come increas. Whatelly its occurs resembles a labid size view of a deep with

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This is the bit the list that is allowed the ST no other and working emergeneets to mit uses the the Manuscoph which case then duable the proce. Even the cuchet insiding All attitudes the service from the cuchet insiding All attitudes to see the service of the cuchet for a valuable in 10 rs applications for the ISM PC.

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The Yorks allows commensures.

The ropout anlows programment interestrictly disage GEM icone as other objects without reserving leak of envelope calculations ropical coding. With Teology is editor for example the programme paint and side in adject at the policies and servine and the Teology level and servines and the Teology. is handed buck to DOS and the application rais somitify. Or wilderer is passible because the functionality of DEM software is best to based on a system selement which does not intentive with the workings of the underlying operating system. The GEM system semiscion and GEM actives as to implemented on any 116 and 3.2 bits CPU

GSM achieves can be implemented an any 15 and 32 bit CPU iconfiguration for CPML MS-DQS PC-DQS and Concurrent DQS operating nything GSM is applicability to a wide range of his claims of the properties GSM applications on great fact from GSM applications on great fact from GSM applications on great fact from

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licensing agree achieve houses to burde CEM THE ST has many recognisable features, not least of all its operating system. To recet users, the ST is correctled by the GEN - Grachics Environment Manager - and that is the means by which users will

Hoseney harded overs from picht is the TOS - Tramel Operating System

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system - CEN or TOS?

008 is a convenient method of

PER BANACO ers not quick to type mor are they

\* January Vine is a freelesse wither

interaction of TOS and GEM One **0S**or two?

releases 128k the TOS and GEM

JEREMY VINE dias deep into the inner workings of the Atari 520ST to

entire peckage - GEM and LOGO -

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The perpose of booting the ST is not only to load TOS and GEM but to interior the entire system and carry out performatetus checks

These determine what kind mentions being used menso colo and so on — whether there is applications in avariable memory those to rain that is a certifulge interest setting various regularies default sellues and a heat of oth vital functions.
Of course this is transparent to 5

carridge.
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# 1029



### By MICHAEL KING

assers information standard 8 bit hospotal bytes to the 7 bit vertical false underwheelight to 1028 Theirs after that mangalishes in your want to prist out a whole servers. Will for all of you who have been

salt for the 100% look no further Tipe in Program I and stee If to dec before getting it to use This is only a submatrice and must be used together with your own program to set up your own platture

BOYER.

If you would like an exemple, tops on Program III which will not up a graphic 8 econowith a basic design solubled oil over it—see Figure I Just set the versels CFTSET to a

other of the picture on the pipper left to right. If you wish your masterplace to orange the left edge of the pipper, then set OFFRET to 0 or to execute the piper left to the pipper left to 100 to execute the piper left to 100 to life or externed pipers rather now OFFRET should be 60.

If your water 1009 is not and have

Figure 1 Protect made by using Programs 1 and 1 logsther

THE WASHINGTON THE WA

No other for the continues

Addressing moder of the 68000 microprocessor

examining the powerful 68000 chip at the heart of the Atari ST, MIKE COOK examines its versatile addressing modes

es the effective address It is the

### MOVES # 5,01

marber toto the assembler is in what follows as an arcredit docred value. Is feet there are two types invascuate addressing reach

immediate addressing mode immediate and Guide immediate Ti quick mode encoparates the values of the second instruction whereas if come immediate the value at it and of the manuaction bytes.

Only larged number values sen be used with the quick mode, but are assembler worth its selt will choose the quick mode of the numbers are within the restricted range. Therefore you do not have to worth

too maph, about the difference between them.

To hendle a variable you must be able to access off-rish nemmary. More of the time you what address you want to use just so in a high lave language you broke what name the visible is. We say the address is.

visible is We say the address a known at pomptie time. To do this you can use the Direc Marriery Addressing mode. This take is sales and compiles in next to the next pompties. All the premidiary mode. The difference is thin whe of the

mode The difference is that whe remains in used it is taken not sake but on the address with write is to be found? For example to move the vermence invarious 8 into state re-

#### NOVER ARDS

is the hexadesimal value of memory address from which to the day.

Again these see two types addressing made — Assaliste and Absolute Long The dail lies in how many write bytes in

to specify the address discosity the short mode is use when you went to address the first of last 20% as membery — where you get exercises the continuing the address is two bytes — orderwises you need to long mode which specifies it long mode which specifies it when the continuing the processing the long mode which specifies it to be the continuing the continuing the long mode which specifies it and the continuing the continuing the long mode which specifies it and the continuing the long mode which specifies it and the continuing the long mode which specifies the long mode which long mode which specifies the long mode which long mode which long mode which long mode lon opinion data for your occase the address of knewnal committee by the where you wan serve open and the serve open of the serve open of the serve open of the serve of the serve of the serve of the serve of which there are of which there are

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to this mode a register holds
the value but the extress of a ve-

The simplest on this cert banch is the Repetiter Individual to this mode a negative hold the who but the edities of a vi-We say that the register pools memory location of coorse to the mode is and the register fine set up to peer to the array pool. For example suppose we will to the reould arruph address of the round arruph to address of the round arruph to address of the

r section in receive in adparar AD and then perform MDVE B III Q.(A1) a breckets Indicate not to 45

what he repeter points to We can then institution to the register, jump both and perform the series institutes This there will be the second layes of our memory. We can edd a consisted on 1st the value in a register by usurp the Register Indirect with Depletement Addressing mode. This allows you to access memory licentees as to 30% orther and or their pointed its lay the orther and or their pointed its lay the orther and or their pointed.

This can be useful if we went occes or perfolsion interest of army whose address or venoble. Note that the desplacement can I area in which case the address mode would be in effect life series the simple register reduct mode address that it is usual to place is desplacement outside. The brackle on the series of the control of the property of the control of the control of the series of the control of the cont

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mample to fluviron 4 is poling to go complete bit have seen with have used that mode in anger 1. Indie a displaced parties are related to the seen with the seen with the seen and the seen

I free pet the poet brightness levere a data regulator (D2) as performed

ADD B II 1,010(A3,D2)

This added the value 1 to the semanty pointed at by the sem of A and D2.

The displecement was not made and so could be zero. As there we many such enough made in me pattern occurrence.

the same code code be used for a miner. There are two more modes in the section. — Post-occernent. Regula loanest and The decrement Regula loanest and The decrement Regula loanest. They are quite a mouth but, business, are quite as made some of indirect addressing. One mode increment the city.

темен тем переих состом реголите тем среждения област от получения тем подельно в бего и розей-соми тем по темпом. Ав илу об тем област по темпом. Ав илу об тем обо рочения при видет обтемпом темпом 

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# LOGO IS AN EXTENSIBLE LANGUAGE SOLD DEFECT RADBURN

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The purpose of this article is to show something of what is possible in Logo using words and finis.

To bugut with Logo is make should be required. You also make the system logge and more powerful, I will flustrate what I read inly looking at its confidenced term.

Logic's that as one found in the programming languages the IF of citizes true THEN do this an optionally ELSE do this La distribute this

TOTE DENSE SAMPS do you want? IS or TOI MAGE YELD ON TO INTER THE SAME (The want respond with 5 or TI safe to societ)

All that the very trival procedure does a to pak for some lipper, create a versible called KEY to hold the response and then test the value of thickershold consure that I is what is saked for the seasons are selected to

about this First in the example INEN trivials in a list and the opts INEN trivials in not present. Second Input is benified by ResidCharsons which slowys paids a simple character word. No less the use of TYPE instead IPR — Olin you wink out why? — Olin you wink out why? segues To do the QR has ted by a parentheols. I en goodhore terremeted by yenchess ) is Logo primitive who share two legues is used with room that two input is as it greatly procedure is a in greatly procedure.

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